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# Refinement of an Instrument to Assess Readiness for Knowledge Management

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THESIS

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# REFINEMENT OF AN INSTRUMENT TO ASSESS READINESS FOR KNOWLEDGE MANAGEMENT

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## Abstract

Academics and practitioners have described knowledge as a primary source for competitive advantage for organizations; however, many attempts at instituting knowledge management programs to increase organizational competitiveness do not succeed. Instituting knowledge management programs generally requires organizations to make significant changes and the concept of readiness has long been believed to be an important precondition for successful organizational change. By linking previous research in enablers for knowledge management and organizational change, it is possible to adapt an established organizational change readiness instrument to measure readiness for knowledge management. This study culminates in the development and field-testing of the resultant knowledge management readiness instrument, filling in an important gap in contemporary literature.

## Dedication

This effort is dedicated to my family.

You are my heart and soul.

## Acknowledgements

I would like to thank Lieutenant Colonel Daniel Holt as well as the other members of my thesis committee for their tireless efforts in guiding this research effort. Additionally, I would like to thank Lieutenant Colonel Summer Bartczak for her mentorship and assistance in bettering myself not only as a student, but as an officer in the Air Force.

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REFINEMENT OF AN INSTRUMENT TO MEASURE READINESS FOR KNOWLEDGE MANAGEMENT

# I. Introduction and Literature Review

## Overview

Drucker (1994) suggested that knowledge is the primary source of competitive advantage for most organizations (1994). He went on to posit that knowledge would surpass traditional organizational resources such as land, labor, and capital as the organizational resource of foremost value. Indeed, Drucker's prophesy may have come to fruition. Recently, researchers have suggested that less than 25 percent of the value in today's organizations can be expressed by traditional financial measures and that other more intangible elements such as knowledge make up the remainder of the value equation (Davenport & Prusak, 2000). This sentiment has been echoed recently by Mason who stated that knowledge is the key to success as well as the primary source of competitive advantage for organizations today (Mason, Castleman, & Parker, 2006).

Numerous definitions for knowledge exist and selecting any single definition risks leaving out key points. For instance, Schwartz approaches the definition of knowledge from an Aristotlean view of the five types of knowledge: scientific, skills-based, experiential, intuition and theoretical knowledge of universal truths (Schwartz, 2006). Edvinsson (2003) characterizes knowledge in terms of intellectual capital and the potential value to be gained by organizations. Finally, Davenport and Prusak (2000)

characterize knowledge as a combination of various cognitive assets such as experience, values and insight that exist in the minds of individuals but can be embedded into organizations through processes and routines as well as in documents and repositories built for the purpose. While the numbers of new definitions being posited seem to suggest that no clear standard has emerged, Davenport and Prusak's general definition of knowledge may be the most cogent to this effort as it is sufficiently generalizable to be easily applied across many situations, yet incorporates many of the themes that recur in other definitions.

To harness the competitive value that comes with knowledge, organizations are increasingly focusing their efforts towards the leveraging of existing knowledge and the creation of new knowledge (Gold, Malhotra, & Segars, 2001). Leveraging existing knowledge is dependent upon organizations' abilities to capture and retain knowledge; however, organizations may take divergent paths in pursuit of this goal (Barchan, 1999). While some organizations focus on technically-oriented programs to codify knowledge and place it into a structured data base, others have emphasized the role of the individual by formulating procedures and creating opportunities for knowledge transfer between people (Hansen, Nohria, & Tierney, 1999). Both strategies have been effective; which strategy an organization employs should depend on its competitive strategy. Those organizations that tend to deal with similar problem sets on a repetitive basis benefit more from the former method while those that focus on providing unique solutions to complicated problems, find more value in the latter (Hansen et al., 1999). Other researchers have explored the creation of new knowledge in organizations and a number of theories exist that seek to describe how knowledge is created (Davenport & Prusak,

2000; Nonaka & Takeuchi, 1995) . Nonaka and Takeuchi focus on an organization's intent to create knowledge, climate of individual freedom, induction of creative chaos, provision for multiple teams working similar problems with an intent to develop best practices, and a requisite variety of personal skill sets as necessary antecedents for an organization that wish to create knowledge

One common characteristic across all of these efforts is the introduction of unique systems and programs, which require fundamental shifts in the way that individuals record, disseminate, and share knowledge. Termed knowledge management initiatives, evidence exists that organizations, even those with a strong history of process and a tradition of business success may find it exceedingly difficult to enact these transformations targeted toward effective and efficient application, retention, and creation of knowledge (Davenport & Prusak, 2000; Gold et al., 2001). Beyond that, the processes needed to institutionalize these new practices are a significant long-term undertaking that few, if any, organizations have succeeded in wholly engraining these knowledge management initiatives into the organizational culture (Davenport & Prusak, 2000).

Given this idea, it seems reasonable to discuss knowledge management initiatives in the broader context of organizational change. Like all organizational changes, the success of knowledge management programs is contingent on the process used to introduce and facilitate changes. Numerous models exist that attempt describe the organizational change process and tactics and strategies leaders can use to move their organizations through this process. It is generally agreed that the change process is a multi-phase process made up of several sequential phases that include a preparation

phase, an initiation or action phase, and an institutionalization phase (Armenakis, Harris, & Feild, 1999; Hage & Aiken, 1970).

Many authors have offered managers, consultants, and researchers a list of tools to facilitate an organization's movement through that multi-phase process. One such process-focused model suggests that the primary vehicle for effecting change is a change message that is purposely structured over time to give direction to the organization as it moves through the steps in the process (Armenakis et al., 1999). Kotter also poses a process-oriented model that details eight steps organizations should use to move through the change process (Kotter, 1995). While the models differ in some ways, they are similar in their emphasis on the necessity of first cultivating and creating readiness for change within the organization (Armenakis et al., 1999; Kotter, 1995). Indeed, it appears that creating readiness for change has long been regarded as a critical step in the change process. For instance, Zand and Sorenson (1975) posited that unless attention is paid to promoting readiness, future efforts towards implementing organizational change may be futile due to institutional resistance. Holt, Armenakis, Harris and Feild (2006) recently echoed this sentiment, suggesting that readiness is still crucial. Furthermore, research specific to knowledge management initiatives indicates that many organizations may not be predisposed for success in knowledge management change initiatives (Gold et al., 2001).

A key concern for managers, then, is how to know when a sufficient level of readiness exists for change in their organization. One literature review on the topic suggested that as many as 40 different measures for readiness have been published (Holt et al., 2006). Although no standard measure has surfaced and the quality of the measures

varies widely, it seems clear that organizational change readiness can be assessed (Holt et al., 2006).

Thus, while knowledge management and organizational change readiness have separately received considerable attention (Holt, Bartczak, Clark, & Trent, 2004; Prusak, 2001), I am not aware of any comprehensive effort that integrates the fundamental theories of organizational change with the paradigm shifts associated with KM. This integration could guide the development of an instrument that would assist managers as they try to gauge their organization's readiness to implement a knowledge management system or strategy. To begin this integration, the most current ideas that have detailed the organizational characteristics and conditions where knowledge management initiatives flourish—termed KM enablers—are examined. This is followed with a discussion of the theories of change that have been suggested. Finally, I close where these theories are blended into one comprehensive idea of KM readiness, establishing a foundation for the refinement of an existing measure of KM readiness.

**KM Enablers.**

In order for organizations to build readiness for a knowledge management change initiative, it is necessary for them to first know what practicing knowledge management will entail, as well as the prerequisites for successful implementation. As such, it is not surprising that a plethora of articles have been composed that identify what it takes to successfully implement a knowledge management initiative. The terminology used to refer to these antecedents to organizational knowledge management success varies widely but phrases such as enablers and critical success factors are commonplace. A cursory

search into the topic of antecedents to knowledge management results in hundreds of articles which vary in style, intended audience and level of rigor. Nonetheless, the relative abundance of writing on the topic should not be confused with consistency. As pointed out by Earl (2001), much that has been written in this arena is either too abstract to be useful to practitioners or too focused on a particular situation to be generalizable to other applications. Davenport, De Long and Beers, (1997) pointed this out as well stating that, "Unfortunately, discussions of knowledge, its use, and management too easily devolve into highly abstract musings" (p. 1). The same article later points out that "…this type of conceptual analysis is of little use to the practitioner faced with the task of what, specifically, he or she should do as a manager of knowledge" (p. 1). One typical example comes from Liebowitz (1999) who discusses six enablers of knowledge management. The enablers he suggests, however, are too general to be used as a recipe for managers and include brief discussions under such headings as, "need incentives to encourage knowledge sharing," and "build a supportive knowledge culture." Others have contributed by discussing the effects of particular knowledge management enablers in-depth. One such researcher is Zack (1999) who outlined the importance of a knowledge strategy. There are few detailed articles that suggest a complete list of enablers. With these limitations in mind and the need for a complete identification of enablers notwithstanding, it is of utmost importance to come to a reasonable conclusion as to what these enabling preconditions are if the overall readiness of the organization for a knowledge management initiative is to be measured in a meaningful way

Since the ultimate goal of this research is to integrate the literary work to-date on change readiness and knowledge management enablers and because each discipline uses

different sets of terminology and jargon, it is necessary to establish a framework from which both sets of literature can be evaluated and compared. One method, originally used by Holt et al, (2004) is to group the enablers according to the basic questions they answer regarding the knowledge management initiative (e.g., who, what, where, or how). Thus, KM enablers might be evaluated and considered by who is involved or the characteristics, skills, and abilities of those that are being asked to exchange or create knowledge. Next, it is important to consider what the initiative includes and its characteristics. These can range from people-centric efforts that focus on enabling contact between knowledge owners to technology-centric efforts that focus on codifying knowledge in large repositories. Another issue revolves around where the effort is introduced. This considers the culture and climate of the organization and the general propensity of the organization to exchange and create knowledge. Finally, the process used to introduce the change, such as whether or not the change has adequate management support, address the question of how the change is made.

Using this framework, the enablers that have been identified are presented in Table 1. There is a requirement that the specific knowledge management initiative being introduced must be appropriate given where it is being used. Thus, "what" knowledge management initiative is selected is important inasmuch as it must be a good fit with the organization. Organizational infrastructure and culture and strategy address the issue of where the change takes place, while human resources management, training and education, motivational aids, measurement, and process and activities all seek to answer the question of how the knowledge management initiative is pursued.

Table 1
Summary of KM Enablers

| Author | Enabler | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Where (Context) | | | | How (Process) | | | | | |
| | Organizational Infrastructure | Strategy & Purpose | Culture | IT | Human Resources Management | Training & Education | Motivational Aids | Measurement | Management Support | Processes & Activities |
| Wong & Aspinwall (2005) | * | * | * | * | * | * | * | * | * | * |
| Alazmi & Zairi (2003) | * | * | * | * | | * | | | * | * |
| Taylor & Wright (2004) | * | * | * | | | | | | * | * |
| Herschel & Nemati (2000) | * | * | | | | | | | * | |
| McDermott & O'Dell (2001) | | | * | | | | | | | |
| Liebowitz (1999) | * | * | * | * | | | * | | * | * |
| Yahya & Goh (2002) | | | | | * | * | * | | | |
| Bhatt (2000) | | | | | | | | | | * |
| Siemieniuch & Sinclair (2004) | * | | | * | * | | * | * | * | * |
| Alavi & Leidner (2001) | | | | * | | | | | | |
| van der Spek, Hofer-Alfeis, & Kingma (2002) | | * | | | | | | * | | |
| Bloodgood & Salisbury (2001) | | * | | * | | | | | | |
| Zack (1999) | | | | * | | | | | | |
| Hansen, et al. (1999) | | * | | | | | | | | |
| Lee & Hong (2002) | | | | * | | | | | | |
| Lam (2005) | | | * | | | | | | | |

| Author | Enabler | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Where (Context) | | | | How (Process) | | | | | |
| | Organizational Infrastructure | Strategy & Purpose | Culture | IT | Human Resources Management | Training & Education | Motivational Aids | Measurement | Management Support | Processes & Activities |
| Hung, Huang, Lin & Tsai (2005) | * | | * | * | | * | | * | * | * |
| King, Marks, & McCoy (2002) | * | * | | * | * | | * | | * | * |
| Alavi & Leidner (1999) | | | * | | | | | | | |
| Davenport et al. (1997) | * | * | * | * | | | * | | * | * |
| Al Busaidi & Olfman (2005) | * | * | * | * | | * | | * | * | |
| Feher (2004) | | * | * | * | * | | * | * | * | |
| Earl (2001) | * | | * | * | | | | | | * |
| Wiig (1997) | | * | | * | | | | | | * |
| Ahmed, Lim & Zairi(1999) | | | | | | | | * | | |
| Davenport & Volpel (2001) | * | | | * | | | | | * | * |
| Hasanali (2003) | * | | * | * | | | | * | * | |
| Hauschild, Licht & Stein (2001) | | | | | | | * | | | |
| Holsapple & Joshi (2000) | | | | | | | | | * | * |
| Horak (2001) | | | | | * | * | | | | |
| Mentzas (2001) | | * | | | | * | | * | | |
| Ribiere & Sitar (2003) | | | * | | | | | | * | |
| Skyrme & Amidon (1997) | | * | * | * | | | | | * | * |
| Trussler (1998) | * | * | * | * | * | * | * | | * | |

Table 1 represents the general enablers of knowledge management in organizations that have been identified. Although this list is likely not all-inclusive, it is useful for identifying general trends and areas of overlap. All of the literature presented either dealt directly with the topic of antecedents to knowledge management or were more general works regarding knowledge management that provided a detailed treatment of antecedents to knowledge management.

As highlighted in Table 1, many knowledge management enablers address the issue of how the knowledge management initiative is enacted in the organization. Human resources management is one such enabler. Wong and Aspinwall (2005) operationalized human resources management as the targeted recruitment, retention and advancement of employees to enhance knowledge management practices. Closely related enablers include the introduction of motivational aids and measurement tools. The need for non-trivial motivational aids has long been recognized as an important knowledge management enabler; the exact nature of the motivational aid can include virtually anything that is of value to the employee including time off, gifts, or money (Davenport et al., 1997; Liebowitz, 1999). The implementation of measurement tools can take a number of forms. From an individual perspective, they are closely tied to human resources management practices and often involve linking an employee's knowledge management activities to his or her evaluation, pay and promotion (Davenport et al., 1997). Organizationally, measurement activities include monitoring how much knowledge sharing or management is occurring on a corporate scale. Simple measurements include counting visits to a knowledge management system; while the many available knowledge management maturity assessments largely make up the field of the more complex measurement activities undertaken by organizations.

Another enabler that addresses how knowledge management should be introduced is training and education of employees. Training and education consists of training on the concepts of knowledge management, building awareness of knowledge management systems and practices, training on the use of knowledge management systems, knowledge management role-related training, and skill development activities in areas such as

creative thinking, problem solving, communication, soft networking and team building (Wong & Aspinwall, 2005). The final enabler identified that addresses how knowledge management practices are introduced includes the broad field of processes and activities. Since virtually any knowledge management initiative necessitates new processes and activities, almost by definition, it is hardly surprising that researchers see the definition and integration of those activities into the daily operation of the organization as key enablers to knowledge management (Wong & Aspinwall, 2005).

The environment where a knowledge management initiative is to be implemented is perhaps as important as how the knowledge management initiative is introduced. Each organization has its own culture, competitive strategy and infrastructure. Culture has been casually defined as, "the way we do things around here" and numerous authors assert that some cultures are more receptive to knowledge sharing than others (Davenport et al., 1997; McDermott & O'Dell, 2001). It is no surprise then, that having a culture that supports knowledge management activities has been identified numerous times as a key enabler of any knowledge management initiative (Alavi & Leidner, 1999; Davenport et al., 1997; Liebowitz, 1999; Skyrme & Amidon, 1997). Zack (1999) outlines the importance of any organization's knowledge strategy, while the need for a corporate strategy supporting knowledge management has been recognized as an enabler of knowledge management initiatives (Hansen et al., 1999; Wong & Aspinwall, 2005).

The infrastructure of an organization must support knowledge management activities. Infrastructure in this case is not limited to the buildings and capital assets that make up the organization's physical infrastructure. Instead, it encompasses the physical infrastructure as well as the less tangible infrastructure of the organization including the

layout of the organizational chart, and the establishment of offices to accomplish key knowledge management tasks. One example of this less-tangible infrastructure is the presence or absence of a Chief Knowledge Officer (CKO) or other similar office that is responsible for the organization's knowledge management activities

By far, the most oft-cited precursor to successful knowledge management programs presented is information technology where more than half of the authors reviewed state that information technology (IT) was necessary for successful implementation of knowledge management. While some authors have cautioned that knowledge management can be pursued with minimal IT resources, there appears to be some consensus that IT is an important enabler. While this research effort concedes that IT may be an important enabler to the successful implementation of a knowledge management initiative, the measurement of whether or not an organization's information technology resources are adequate for a given knowledge management initiative is well-beyond the scope of this effort. Furthermore, while IT resources are most easily measured on an overall organizational scale, many, if not most, of the other factors regarding knowledge management readiness are best suited to an individual level of analysis.

Many authors discussing knowledge management enablers also addressed the need for a good fit between the organization and the knowledge management initiative chosen for implementation. Albeit indirectly, this acknowledges that a particular knowledge management initiative chosen plays an important role in the overall success of the initiative in much the same way the factors that address *where* and *how* initiatives are implemented. While normally hidden in discussions of strategy, culture, IT or some

other enabler, the particular knowledge management initiative that is chosen for any organization must work well considering the environment in which it is expected to work and that different tools can be used to implement different types of initiatives. For example, Hansen et al. (1999) point out that a knowledge management system focusing on codification and data repositories is more appropriate for organizations which routinely face similar problems while personalized solutions that focus on knowledge sharing activities between organizational members is more appropriate for those organizations that more often face novel problems in new contexts.

Generally, the primary enablers of knowledge management are not specific to knowledge management initiatives per se, but rather represent important enablers for all organizational change. For example, the need for top management support was identified as a critical enabler of knowledge management initiatives (Davenport et al., 1997; Herschel & Nemati, 2000; Liebowitz, 1999; Skyrme & Amidon, 1997). This is consistent with the change theorists that include management support as a necessary precondition to planned organizational change (Armenakis et al., 1999; Armenakis, Harris, & Stanley, 2002; Holt et al., 2004; Kotter, 1996). Similar parallels can be drawn between the knowledge management and change enablers on the importance of a clear strategy and purpose, role of culture, and alignment of training and education programs and human resources management practices. To fully understand the parallels between knowledge management and generic change enablers, it is useful to briefly outline some elements of change theory

**Descriptions of Organizational Change**

For nearly sixty years, organizational change authors have theorized how planned or deliberate change occurs in organizations. Invariably, the process of organizational change, as noted earlier, has been divided into a series of segments, steps, or phases through which the organization will proceed. While each descriptive model is different, they do have some commonalities, the foremost of which is that while they describe what the change process looks like, they do not articulate how to go about creating or managing that process.

Lewin's (1947) model is perhaps the oldest and describes organizational change as a three-step process consisting of unfreezing, moving and freezing. While the other models have expanded upon this idea and further subdivided the process into additional phases (see Table 2), they generally agree that change proceeds through at least a readiness phase where the organization makes a decision to, and is prepared for change, an adoption phase where the change is actually carried out, and a institutionalization phase wherein the change is made lasting. This process, described by Armenakis, et. Al, (1999) as the three generic stages of change seems to have remained stable over time, even if the names attached to the various phases have not.

Table 2
Descriptive Change Models

| **Author(s):** | **Steps:** | | | | | | |
|---|---|---|---|---|---|---|---|
| | Phase 1 | | | Phase 2 | | | Phase 3 |
| Lewin (1947) | Unfreezing | | | Moving | | | Freezing |
| Hage & Aiken (1970) | Evaluation | | | Initiation | | Implementation | Routinization |
| Rogers (1983) | Knowledge | Persuasion | Decision | Implementation | | | Confirmation |
| Levy (1986) | Decline | | Transformation | Transition | | | Stabilization and Development |
| Klein (1992) | Readying | | | Compose Change | | Implementation | Ongoing Management |
| Armenakis, et. al (1993) | Readiness | | | Adoption/Commitment | | | Institutionalization |
| Palmer (2004) | Current State | | | Transition State | | | Improved State |

To provide a full treatment of the change process, it is important to go beyond a nominal description of the generic change process and to detail what each of the three steps entails. The first phase begins, according to Palmer (2004), with the current state; that is, the state that exists before the decision to change is made. The next portion of the readiness phase occurs when those in power determine that the current state is no longer desirable and that a change is in order. The impetus for this change could be driven by crisis or a more mundane effort to improve organizational performance; it could also be in response to some other stimulus such as a technological innovation or exigent environmental factor (Hage & Aiken, 1970; Levy, 1986; Mink, 1993; Rogers, 1983). Regardless of the reason for the change, one commonality between all the various change models is a decision point in phase one where a course of change is decided. Another common feature to the first phase of change is some sort of preparation of the organization for the change at hand. This process is often described as the routine where organizational resources freed such as finances and personnel (Hage & Aiken, 1970). Contemporary authors are likely to include and additional step of preparing and garnering commitment from the individuals within the organization for the change initiative (Armenakis et al., 1999; Armenakis et al., 1993; Mink, 1993). Termed readiness, this important concept will be discussed fully in a later section of this paper.

The second phase of change involves the actual implementation of the organizational change. During this phase, all of the plans and decisions made during the first phase are initiated. In other words, the actual operations of the organization likely remained constant during the first phase but are put into flux in the second phase as the organizational change is introduced. It is in this phase where the greatest turmoil is likely

to be experienced in the organization as everyone either complies with the changes requested by management or not (Hage & Aiken, 1970).

The final phase of change, institutionalization, occurs after the changes have been made and accepted throughout the organization and management begins efforts to ensure that the changes attain some degree of permanence and that the organization does not revert to its previous unsatisfactory condition. While the various models described go into significant depth regarding the first two phases of change, considerably less work has been done regarding the process of institutionalization (Armenakis et al., 1999). Research has shown, however, that the easier a change is to introduce to an organization, the easier it will be to institutionalize the change as a result. Furthermore, while institutionalization is discussed in this paper in terms of a relative end-state, it is apparent that the institutionalized change of today may indeed become the current state in need of change tomorrow. In this light, the permanence afforded by institutionalization is not literal, but rather a period of relative stability before another change occurs (Armenakis et al., 1999).

**Prescriptions for Organizational Change**

Because most change efforts fail, and most importantly, because the reason for these failures is that change efforts are often improperly shepherded (Armenakis et al., 1999), astute managers should be eager to learn how to guide their organizations through change. Unfortunately, there are almost as many recipes for change management as there are organizations attempting change. One of the most comprehensive prescriptions was proposed by Armenakis, Harris, and Feild (1999). Incorporating the thoughts of several

(Armenakis, Harris, & Feild, 1998; Armenakis et al., 1999; Armenakis, Harris et al., 2002; Bernerth, 2004; Holt et al., 2006; Holt et al., 2004), they prescribe the type of message that should be shared with employees regarding the change as well as the primary vehicles or strategies that can be used to reinforce the change message at appropriate times during the transition. Armenakis, et. al (1999, p. 103) identify the change message stating, "All efforts to introduce and institutionalize change can be thought of as sending a message to organizational members". This sentiment was echoed by Bernerth (2004, p. 41) when he stated that, "communication of the change becomes the primary mechanism for creating readiness for change among organizational members."

The elements of a change message are discrepancy, appropriateness, self-efficacy, principal support and personal valence (Armenakis et al., 1999; Armenakis et al., 1993). Armenakis et al. (1999) define each element of the message. Discrepancy is a general message, referring to information that points out the difference between the organization's current and desired states. Appropriateness is more specific and concerned with whether or not the current change initiative is the right one to correct the noted discrepancy. The efficacy message is intended to create a belief among organizational members that they are capable of successfully implementing the change. The principal support message component is intended to convince organizational members that the formal and informal leaders of the organization are fully supporting the change. Finally, the personal valence message seeks to point out what the organizational member stands to gain by complying with the change.

Many other prescriptions for change identify similar elements of the message. For instance, Kotter (1995; , 1996; , 2002) identifies the need to develop a sense of urgency which is analogous to the discrepancy message mentioned above. Other authors have identified the need for a discrepancy message as well, although they, too, used varying terms towards the same meaning (Hammer & Stanton, 1995; Klein, 1992). Similar to Armenakis' message of appropriateness, Brown (1993) argued that rationalization and legitimization were important to outline that the current change was necessary and would fix the organization's problems. Likewise, other models are replete with examples of the other elements of the change message as well (Bernerth, 2004; Brown, 1993; Klein, 1992; Kotter, 1995, , 1996; Kotter & Schlesinger, 1979).

The strategies used to deliver and reinforce the change message are significant facet of the prescriptions. Drawing from Armenakis et al. (1993), three strategies are important to the creation of readiness for change. Specifically, they suggest that active participation, persuasive communication and management of external information are strategies that create and promote readiness in organizational members. Armenakis et al. (1993) further recommend the use human resource management practices, rites and ceremonies, diffusion practices, and formalization activities to institutionalize change. Again, these strategies overlap significantly with those suggested by others. Klein (1992), for instance, posited that employee involvement (i.e., participation) was one of the most important strategies for facilitating change while Brown (1993) identified the use of rites and ceremonies as an way to solidify a change initiative. Furthermore, Brown suggested that the strategies of conducting rites of passage and enhancement as well as integration and conflict resolution would facilitate change. The former is analogous to

Armenakis' strategy of using human resource management practices and the latter is very similar to formalization activities.

**Readiness**

Many of the change prescriptions are focused on reducing resistance within the organization (Coetsee, 1999; del Val & Fuentes, 2003; Folaron, 2005; Kotter & Schlesinger, 1979; Pate, Martin, & Staines, 2000; Piderit, 2000; Stanley, Meyer, & Topolnytsky, 2005; Waddell & Sohal, 1998; Washington & Hacker, 2005; Welbourne, 1995). Generally, resistance is characterized as the acts of organizational members to delay or obstruct organizational change (del Val & Fuentes, 2003) Although resistance has been studied at length, some authors have argued that the notion of resistance is not sufficient to describe the range of responses that an organizational member may have with regard to a particular change (Armenakis et al., 1993; Piderit, 2000). Piderit (2000) contests that ambivalence towards change may be the most common reaction to organizational change. Coetsee (1999) might have agreed as he argued that resistance and commitment to organizational change represent polar extremes along a continuum of possible outcome behaviors of individuals in organizations. Earlier, Armenakis, et al. (1993, p. 683) termed this continuum *readiness* and offered the following as a definition: "Readiness is the cognitive precursor to the behaviors of either resistance to, or support for a change effort." The notion that resistance to change and readiness for change are separate but related constructs was echoed by Clarke, Ellet, Bateman and Rugutt (1996) although they favored the use of "receptivity" to change rather than readiness.

Most recently, Holt, et al. (2006) endeavored to synthesize 32 different readiness assessment tools using facet analysis and subsequently provided the following definition of readiness:

> "*Readiness for change* is a comprehensive attitude that is influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., circumstances under which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved and collectively reflects the extent to which an individual or a collection of individuals is cognitively and emotionally inclined to accept, embrace, and adopt a particular plan to purposefully alter the status quo."

The use of the individual, content, context, and process factors as the most important dimensions of readiness appears to be well-grounded. The reasoning behind this was explained by Armenakis and Bedeian (1999) as they reviewed the change research of the 1990s. In their research, they suggest that these four broad categories of variables answer the basic questions about any change initiative. These ideas can also be linked to the enablers of knowledge management that were previously introduced. According to Holt et al.'s (2006) definition, individual, content, context, and process variables answer the questions of who, what, where, and how respectively—the elements of KM that were discussed.

Attributes of individuals, or "who" is being required to change, have been shown to be key issues in determining readiness. Jansen (2000) postulated that creating readiness necessitates the proactive effort on the part of a change agent to influence the

beliefs, attitudes, intentions and ultimately the behavior of the individuals within the organization to be changed. There are two contextual factors that operate within the organization's background as any change is introduced. First, there is a climate or culture (i.e., internal context). There are some firms that have an innovative culture—we would expect them to be more ready than those with more rigid cultures. Also, individuals skills, abilities, and predispositions are a background factor. Some individuals are more rigid than others. Thus, even in specific culture that is innovative there are those that are "creatures of habit" that enjoy stability and avoid risk or turbulence. While a portion of this is captured in culture the nature of organizations suggest that the individual-level simultaneously is influenced and influences the organizational-level as a whole. Holt et al. (2006) found seven instruments that measured readiness as some combination of individual traits and abilities. Likewise, Clark (2003) had suggested that individual attributes made substantial differences in regards to the readiness of the individuals in question. In his piece, he determined that individual traits of interest were positive and negative affect, efficacy and innovativeness.

As with KM enablers, there is significant support for the notion that the content, or "what" of a change initiative contributes to readiness. Clarke, et al. (1996) showed that receptivity to change was dependent on the specifics of the change being implemented, and separate from receptivity to some sort of change in general. This suggests that some organizational members may support change but these same members may not support a particular change initiative. Clark (2003) argued that change content could be measured by evaluating perceptions of the appropriateness of the change and how strongly an individual related to a change, otherwise known as personal valence.

Holt et al. (2006) similarly determined that change content was made up of perceived appropriateness, the costs and benefits of the individuals making the change, and the amount that the current change required a deviation from the organization's current culture.

The notion that the context of a change initiative, or "where" a change is going to take place, affects change readiness also has considerable support among change experts. Clark (2003) measured context by simultaneously assessing discrepancy and organizational support, where discrepancy involves the perception of individuals within the organization that there is some general need for change and organizational support consists of perceptions of the general state where leaders listen and are willing to incorporate the thoughts of others. Clearly, the need for a perception of both discrepancy and organizational support is well-substantiated as virtually all of the prescriptions for change management previously discussed mention the need to clearly convey both to the members of the organization.

Of all the dimensions of readiness, perhaps none have more support than the idea that the process by which change is introduced, or "how", affects the level of readiness created in the organization. Indeed, the prescriptions discussed address, in one form or another, the process by which change is introduced (Armenakis et al., 1999; Bernerth, 2004; Kotter, 1995; Kotter & Schlesinger, 1979). Holt et al. (2006) suggested measuring leadership support for a change as one important part of the change process. This sentiment was stated previously by Clark (2004) as well when he argued that management support as well as participation, communication climate, and quality of information were important aspects of change process. The benefits of participative

decision making has been argued extensively by authors such as Armenakis et al. (1993) and Kotter (1995; , 1996; , 2002). Similarly, the literature supports the notion that communications issues play a key role in determining readiness. Persuasive communication has been cited extensively by Armenakis, et al. (Armenakis et al., 1999; Armenakis et al., 1993; Armenakis, Harris et al., 2002) as a method of creating readiness. Others have argued that the more good information individuals have regarding a change, as well as the extent to which they believe the information is accurate positively affects readiness in individuals (Washington & Hacker, 2005).

Although it is clear that all of the dimensions of readiness are important, it is necessary to select a particular unit of analysis if any measure is to be developed. Since this paper specifically addresses readiness for a knowledge management initiative, and because knowledge generally exists in the mind of the knowledge owner, the individual level of analysis seems to be the most useful for this effort.

**KM and Change Readiness**

Building from the common language shared by knowledge management and change theorists, there is considerable overlap between what knowledge management researchers assert is necessary to implement knowledge management and what change theorists suggest is necessary for any organizational change. One possible interpretation for this overlap of enablers for knowledge management initiatives and the prescriptions for success from organizational change theorists is support for the notion that was previously introduced in this paper. The successful introduction of a knowledge management initiative may best be understood and characterized in the broader context of

organizational change. In this way, it may be possible for the knowledge management practitioner to overcome the limitations of the knowledge management enabler literature expressed by Earl (2001) by "borrowing" from the prescriptive theories offered by the organizational change literature.

When comparing KM enablers and factors known to contribute to readiness, considerable overlap is quickly apparent. Process was shown to be a key dimension of organizational readiness for change, as previously discussed (Armenakis et al., 1993) It should not be surprising, then, that organizational change researchers identified many of the same enablers as were found in the KM literature. For instance, Armenakis, Harris and Mossholder (1993) point out the importance of aligning HR policies and providing non-trivial motivational aids. This same advice is given by many KM researchers as being necessary for a successful KM program (Liebowitz, 1999; Skyrme & Amidon, 1997). Similarly, many of the knowledge management authors identified the importance of the organization's activities and processes for sharing, producing and transferring knowledge as being key to the overall success of a KM effort (Davenport et al., 1997; Holsapple & Joshi, 2000; Liebowitz, 1999). This notion appears to be analogous to Armenakis, Harris and Mosholder's (1993) discussion of rites and ceremonies, diffusion practices and formalization activities.

The overlap between KM and change readiness writings does not stop with the process used to introduce the change, rather, similar overlap can be found regarding both the context and the content of the initiative. The KM enablers of culture and organizational infrastructure identified in much of the KM enabler work appears to address the issues of a fit between what change is being implemented, i.e. the type or

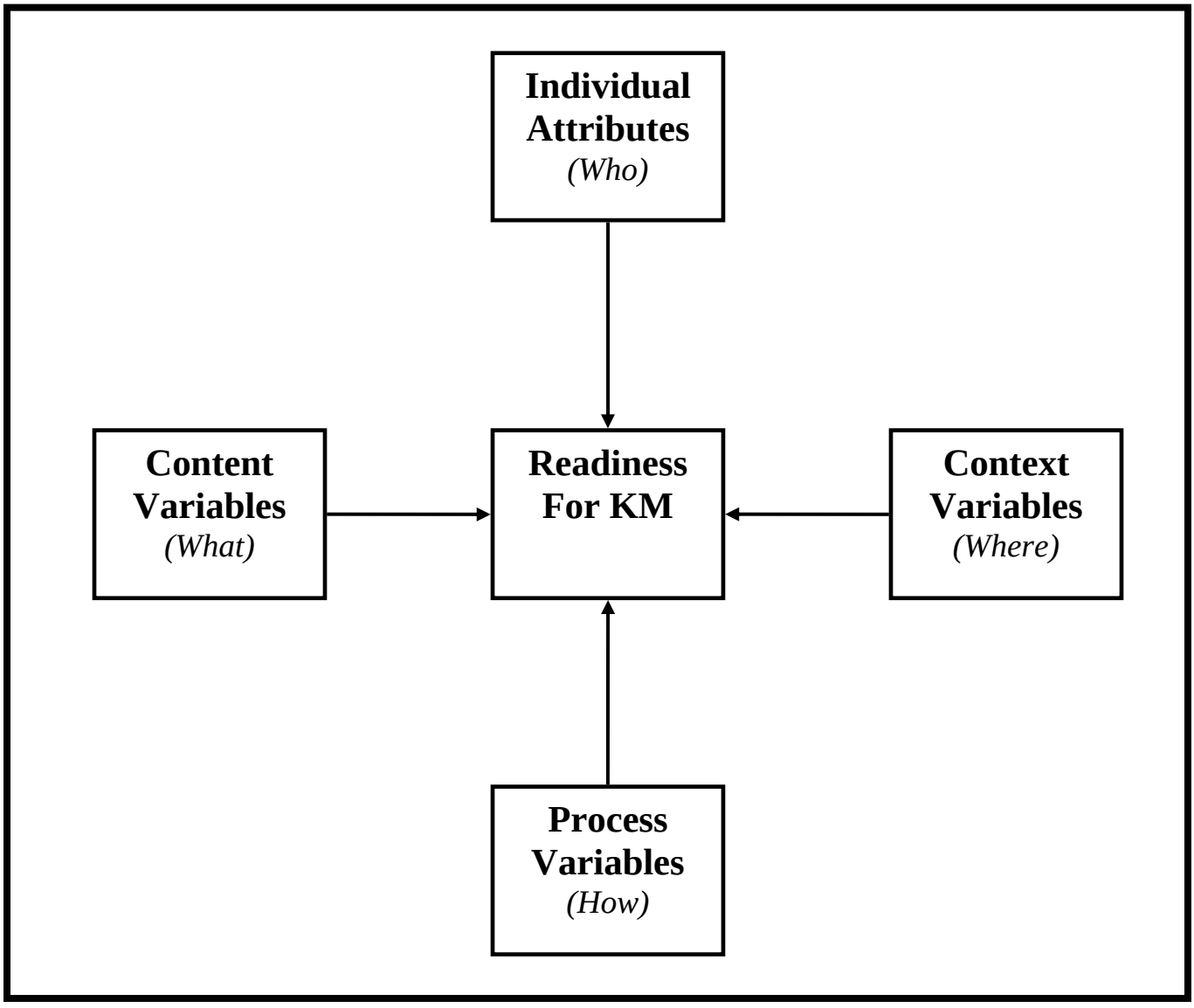
content of the KM program and where it is being implemented, i.e. the context of the change initiative. Likewise, Zack (1999) pointed out the necessity for a fit between the knowledge strategy and the organizational strategy, another contextual readiness issue.

It seems clear, then, that considerable parallels exist between what were identified as enablers of knowledge management and the many prescriptions for readiness; however, it is important to note that the overlap shown in the two bodies of research is not complete. Specifically, while change readiness experts point out the importance of individual attributes to the readiness of the organization, there is virtually no mention of individual attributes in the reviewed writings on KM enablers. While there are many possible explanations for this lack of overlap, two explanations seem to be the most glaring. A somewhat dubious explanation is that while individual attributes are critically important for most types of organizational change, they are not important enablers of knowledge management. This explanation seems lacking and, indeed, I found no such arguments among experts. The second, seemingly more likely explanation, is that the more-developed field of change readiness has identified an enabler of organizational change readiness that has yet to be named among the enablers of knowledge management. Given the inherently personal nature of knowledge and the notion that all individuals are likely to have their own attitudes and beliefs towards it, there is a high degree of face validity to the notion that individual characteristics will play a key role in the implementation of an organization's knowledge management program.

With so much overlap between knowledge management enablers and change readiness and the singular gap between the two addressed, it follows that pre-existing measures of organizational readiness for change would provide a suitable beginning for

developing a measure for assessing an organization's readiness for knowledge management. Furthermore, previous research has utilized such a method with some success (Holt et al., 2004). Figure 1 depicts the elements of readiness for knowledge management, in terms of the dimensions of readiness discussed. The result represents a blending of the work-to-date on knowledge management enablers and organizational readiness for change.

Figure 1
Adapted Readiness for Knowledge Management Model



# II. Methodology

## Introduction

The stated goal of this research was to refine the existing readiness for knowledge management instrument developed by Clark (2003) to better reflect lessons learned from literature and to update some of the scales and items that originally performed poorly. This chapter details the contents of the resultant measure as well as the location where it was tested. The instrument as developed was intended to measure an organization's readiness for a particular knowledge management initiative; however, the organization where the field testing took place had not settled on any particular knowledge management program, therefore some scales that required respondents to consider a specific KM program had to be eliminated during the field test. Those scales not included in the abbreviated measure are indicated in the measures section of this chapter.

## Sample

The population for this study included the employees of a manufacturing firm whose management was considering implementing a knowledge management program to consolidate manufacturing process improvements and best practices. Due to the size of the organization, with sixty members total, it was most appropriate to attempt a census of the organization rather than some random sampling technique.

## Demographics

Fifty individuals or eighty-three percent of the firm completed the questionnaire. The respondents included both management and worker level employees as well as long-term employees and new hires. Limited demographic information was gathered in this study as it was believed that participation would be higher if the respondents believed their responses could not be linked to their identities. The demographic data obtained included the respondents' level within the organization and length of tenure at the organization. To measure the respondents' level, they were asked, "To the best of your knowledge, how many levels of management separate you from your organizations most senior leader (president, CEO, etc.)?" The mean organizational level was 3.38 (*SD* = 1.53). The average length of employment at the organization was 116.8 months (*SD* = 98.98). The relatively large spread of employment organization was a result of a high number of employees with either very short or long lengths of employment.

## Organizational Setting

The organization sampled was a small manufacturing firm that specialized in making metal parts for the automotive and aircraft industries. The organization has recently undergone an increase in demand for its products and subsequently added to its employment roles to keep up with increased demand. The introduction of new and relatively unskilled workers needing training illustrated to the organizational managers the knowledge component of their work. Ensuring that all employees had access to those with knowledge that could help them complete their tasks, ensuring that specialized knowledge was not lost as employees retired and transferring improvements made in

process improvement initiatives across the various shifts and work centers led the organizational leadership to consider implementing some knowledge management initiative.

**Procedure**

Data was collected through the administration of written questionnaires in the workplace. Employees gathered in groups of five to nine each, early in their respective shifts to complete the survey. All administrations of the survey were given in the same conference room which relatively comfortable, had adequate light, and was isolated from the noise of the manufacturing floor. Respondents were given written survey questionnaires as well as pencils with which to record their answers. The primary researcher personally administered each of the surveys and read the survey instructions to each group prior to beginning the survey. The respondents placed the completed questionnaires in a box near the door as they exited. Fifty surveys were completed, accounting for eighty-three percent of the organization. Of the ten individuals not surveyed, four were absent from work, one declined participation, two were unable to take the survey due to a language barrier and three were long-haul freight delivery drivers out of the immediate area.

**Measures**

This study primarily used measures that were presented by Clark (2003); however, some scales were deleted or modified to better reflect lessons learned from literature. As with Clark, the instrument evaluated each of the dimensions of change readiness—the individual, the change context, the change content, and the change

process. Unless otherwise noted, participants responded to each item on Likert-type rating scale consisting of 7 points where 1 represents *strongly disagree* and 7 represents *strongly agree*. Changes were made to the items used by Clark to the extent that it was necessary to adapt them to knowledge management programs being considered in the organizations where they were administered. None of the items were changed substantively.

## Individual

As with Clark (2003), four individual aspects of the change were measured. These included positive affect, negative affect, efficacy, and innovativeness.

***Positive Affect.*** Positive affect was measured using ten items developed by Watson, Clark and Tellegen (1988). These items measured one's disposition towards having general feelings of enthusiasm, activeness and alertness. The measure used a five-point Likert-type scale consisting of *very slightly or not at all*, *a little*, *moderately*, *quite a bit*, and *very much*. Higher scores corresponded with a higher level of energy, concentration and pleasurable engagement. One item was, "determined." Watson, Clark and Tellegen (1988) and Clark (2003) reported coefficient alphas of .90 and .95, respectively.

***Negative affect.*** As with Clark (2003), negative affect was measured using ten items developed by Watson, Clark and Tellegen (1988). These items denoted general feelings of anger, contempt, disgust, fear, and nervousness on the same five-point scale as the previous measure. An example item was, "upset". Watson, Clark and Tellegen (1998) and Clark (2003) reported coefficient alphas of .84 and .87, respectively.

***Efficacy.*** Efficacy was measured using six items recently updated by Holt et al. (2006). The items measured the extent to which one felt that he or she had the skills and was able to execute the tasks and activities that are associated with the implementation of a knowledge management initiative. Holt et al. (2006) and Clark (2003) reported coefficient alphas of .82 and .84, respectively. One item was, "If we implement knowledge management, I feel I can handle it with ease."

***Innovativeness.*** Innovativeness was measured by Hurt, Joseph, and Cook (1977). These items sought to measure participants' general willingness to change. An example item was: "I am generally cautious about accepting new ideas." Clark (2003) reported a coefficient alpha of .84.

## Content

Three content variables were measured (see Clark, 2003). These included change evaluation, appropriateness and personal valence. Taken together, these three variables indicated the degree to which the participants perceived a need for a particular knowledge management initiative, as well as the degree to which they believed the proposed initiative would be favorable (or unfavorable) and the benefits the initiative presented to the individual.

***Change evaluation.*** Change evaluation was measured with Kaslow's (1977) eight item semantic differential scale. The scale consists of adjective pairs that represented a continuum of attitudes (e.g., good-bad). Participants indicated which of the words best represented their thoughts regarding the change using a seven point scale where 1 was anchored by one of the adjectives and 7 was anchored by the other. One adjective pair included in Kazlow's instrument was "worthless-valuable." Kaslow did

not report an estimate of reliability, although Clark (2003) reported a coefficient alpha of .89.

***Appropriateness.*** Appropriateness was measured using 10 items developed by Holt (Holt, Armenakis, Harris, & Feild, in press) The items measured the degree that the participants believed the knowledge management initiative was aligned with the organization's objectives. One example item was, "there are a number of rational reasons for [name of km initiative]". Internal consistency has been assessed using coefficient alphas by Holt et al. (in press), and Clark (2003)in at least three organizational settings with results measuring .94, .80, and .91 respectively.

***Personal valence.*** Personal valence was measured using six items developed by Holt et al (2006). These items measured the degree to which participants anticipated a personal benefit as a result of the change initiative. An example item was, "After knowledge management, I expect to be recognized more for the work I do." The internal reliability of Holt's six items has been tested by Clark (2003) and Holt et al. (2006) with scores of .62 and 62 respectively. Although these scores do not suggest the .70 minimum suggested by Nunally (1978), the scale was used as no other published scales are known to perform better and it is still unknown how the personal valence scale will react in all settings.

## Context

As with Clark (2003), three aspects of the internal change context were measured. These included participants' perception of organizational support, and discrepancy.

***Perceived organizational support.*** Perceived organizational support was measured using six items originally developed by Eisenberger, Huntington, Hutchinson and Sowa (1986). These items captured the degree to which participants believed the organization was committed to them, valued their contributions, treated them favorably and cared about their well-being, with higher scores corresponding to higher perceived levels of support. As with Clark, the six items used were a subset of the 32 originally developed by Eisenberger et al. (1986). Other researchers have also used a subset of Eisenberger et al.'s original scale and have maintained high degrees of reliability. For example, Loi, Hang-yue, and Foley (2006) used a six-item subset of this scale with a published reliability of .92. Clark (2003) documented a reliability of .92. An example item included, "The organization takes pride in my accomplishments."

***Discrepancy.*** Discrepancy was measured using three items adapted from Armenakis, Self, and Schaninger (2002) The scale as originally written performed poorly with an internal consistency of .19 (Clark 2003); however, it was determined that one item was primarily responsible for the low internal consistency score. Therefore, the three items used in this scale included two items from Self and Armenakis (unpublished) and one new item which replaced the poorly performing item. The two original items include, "There is a clear vision guiding our organization." and, "There is a clear need for [organization's name] to change our business activities." The new item was, "Our organization could improve if it made some changes."

### Change process

Four aspects of the change process were measured. These included participants' perception of management support, participation, communication climate and information quality.

***Management support.*** Management support was measured using six items, updated by Holt et al. (2006) that gauged the participant's evaluation of the level of support and commitment to the change exhibited by senior management. One example item was, "Every senior manager has stressed the importance of knowledge management.". Clark (2003) and Holt et al. (2006) measured the internal reliability of the items with respective resultant coefficient alphas of .84 and .87.

***Participation.*** Participation was measured by four items originally developed by Wanberg and Banas (2000). The items represented the participant's perceived degree of input and participation in the change process. One example item was, "I was able to ask questions about knowledge management." In previous research, Wanberg and Banas (2000) and Clark (2003) reported coefficient alphas of .72 and .77 respectively.

***Communication climate.*** Communication climate was measured by four items originally developed by Miller, Johnson, and Grau (1994). These items measured the degree that participants believed informal networks, made up of coworkers and supervisors, provided necessary information with higher scores indicating generally more effective communications. An example item was, "My performance would improve if I received more information about what's going on here." Miller, Johnson and Grau (1994) and Clark (2003) reported coefficient alphas of .79 and .78 respectively.

***Quality of information.*** Quality of information was measured using three items developed by Miller et al. (1994). The items captured the degree to which the respondents believed that the information they had during the change process was useful and relevant. An example item was, "The information I received about knowledge management has adequately answered my questions." Miller (1994) and Clark (2003) reported coefficient alphas of .86 and .82, respectively.

# III. Analysis

## Introduction

This chapter describes the techniques used to analyze the sample data. Specifically, this chapter includes descriptive statistics, including measures of central tendency, spread and scale reliabilities. Bivariate relationships between all scale scores are presented, along with results from comparisons between respondents from different organizational levels and lengths of employment.

## Results

### Mean Score Analysis

Table 3 provides a summary of descriptive statistical data pertaining to the administration of the measures. Generally, the mean scores and standard deviations quantify the overall perceptions of the sample population towards the various dimensions of knowledge management readiness. The individual variables generally measured the predisposition of individual respondents towards various mood states, the degree to which they believed themselves capable of coping with the introduction of a KM program, as well as their general tendency towards innovative behavior. In an effort to present the data in this section coherently, demographic variables such as an individual's level in the organization and length of tenure within the organization were grouped with the individual scales although they are not scale scores per se. Mean scores on the

Table 3
Descriptive Statistics

| *Variables* | *M* | *SD* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* | *12* | *13* | *14* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Individual** | | | | | | | | | | | | | | | | |
| *1. Level*† | 3.38 | 1.53 | **(na)** | | | | | | | | | | | | | |
| *2. Time (years)* | 9.73 | 8.25 | -0.07 | **(na)** | | | | | | | | | | | | |
| *3. Positive Affect* | 3.46 | .77 | -0.20 | -0.16 | **(.86)** | | | | | | | | | | | |
| *4. Negative Affect* | 1.79 | .70 | 0.23 | 0.01 | -0.16 | **(.84)** | | | | | | | | | | |
| *5. Efficacy* | 5.34 | .74 | 0.07 | 0.03 | -0.06 | 0.04 | **(.51)** | | | | | | | | | |
| *6. Innovativeness* | 4.92 | .93 | 0.05 | -0.18 | -0.05 | -0.16 | .37(*) | **(.74)** | | | | | | | | |
| **Context** | | | | | | | | | | | | | | | | |
| *7. POS* | 3.26 | 1.34 | -.33(*) | -0.09 | .41(**) | -0.18 | -0.20 | -0.01 | **(.81)** | | | | | | | |
| *8. Discrepancy* | 5.69 | 1.36 | 0.01 | 0.01 | -0.14 | 0.10 | .43(**) | 0.03 | -.41(**) | **(.57)** | | | | | | |
| **Process** | | | | | | | | | | | | | | | | |
| *9. Communication Climate* | 3.11 | 1.30 | -.38(*) | -0.17 | .40(**) | -0.07 | -0.02 | 0.16 | .65(**) | -.42(**) | **(.76)** | | | | | |
| **Readiness** | | | | | | | | | | | | | | | | |
| *10. Pessimism* | 3.65 | 1.19 | .33(*) | 0.29 | -0.19 | -0.09 | -0.12 | -.30(*) | -.37(*) | .33(*) | -.48(**) | **(.67)** | | | | |
| *11. Affective* | 5.63 | .69 | -0.29 | 0.11 | 0.06 | -0.02 | .44(**) | .30(*) | 0.09 | -0.01 | .30(*) | -0.25 | **(.52)** | | | |
| *12. Continuance* | 3.82 | 1.05 | -0.29 | 0.18 | 0.05 | 0.28 | -0.09 | -.41(**) | 0.07 | 0.02 | -0.10 | 0.10 | -0.24 | **(.71)** | | |
| *13. Normative* | 4.78 | .90 | -.39(*) | 0.23 | -0.01 | -0.15 | .40(*) | 0.08 | 0.17 | 0.10 | 0.20 | -0.06 | .49(**) | .35(*) | **(.61)** | |
| *14. Overall* | 4.79 | .60 | -.42(*) | 0.28 | 0.17 | 0.05 | .37(*) | -0.08 | 0.17 | 0.04 | 0.20 | -0.03 | .52(**) | .70(**) | .85(**) | **(.70)** |

*Notes*. *N* = 39 - 49 due to missing data. POS = Perceived organizational support. Reliabilities (coefficient alpha) are shown in parentheses along the diagonal.

† Employees at levels greater than three were defined as workers, all others were defined as managers

* Indicates significance at $p < .05$

**Indicates significance at $p<.01$

positive and negative affect scales depicted the affectual traits of the sample as slightly more positive than negative, with average values for positive affect ($M$ = 3.46, $SD$ = 77) nearly double those for negative affect ($M$ = 1.79, $SD$ = .70) but still clustered very near the center of the five-point scale. Similarly, mean scores for efficacy ($M$ = 5.34, $SD$ = .74) indicate that the population did not anticipate great challenges in implementing a KM program; however, the scores do not indicate an abundance of confidence. Concerning innovativeness, the mean scores ($M$ = 4.92, $SD$ =.93) indicate a sample population that considered themselves to be slightly more innovative than not, but with a score that was relatively close to the neutral position.

The context scales measured both the extent to which the individual believed the organization was committed to them as well as the extent to which the individual believed the organization needed to change. The perceived organizational support (POS) and discrepancy scales measured whether the individual believed the organization valued their contributions and needs to change, respectively. Respondents indicated they did not find the organization particularly supportive, with mean scores slightly lower than neutral ($M$ = 3.26, $SD$ = 1.34). Discrepancy scores, however, were typically a higher than neutral ($M$ = 5.69, $SD$ = 1.36) indicating a general tendency for respondents to believe the organization needed changes.

The singular process scale, communication climate, measured the extent to which individuals felt they typically received necessary information, with higher scores indicating more effective communications. The sample population produced a mean score that was slightly below neutral ($M$ = 3.11, $SD$ =1.30) indicating that they typically believed communications were less than optimal.

The readiness variables measured the extent to which individuals were pessimistic concerning possible KM changes as well as their perceived likelihood to demonstrate behavioral support for a KM program. The mean score for pessimism ($M$ = 3.65, $SD$ =1.19) indicated that the sample population was not overly pessimistic regarding KM changes; however, scores were very close to neutral. Regarding change commitment, respondents typically indicated a slight tendency towards intention to support a KM program with slightly positive mean scores on the overall scale ($M$ = 4.79, $SD$ = .60). As the focus of this study is on readiness, it is also salient to note that more than ninety percent of respondents indicated that they were neutral or ready for change. On the three commitment subscales, affective commitment, continuance commitment and normative commitment, the mean scores were on both sides of neutral with mean scores and standard deviations of ($M$ = 5.63, $SD$ =.69), ($M$ = 3.82, $SD$ =1.05), and ($M$=4.78, $SD$ =.90) respectively.

## Intra-dimensional Bivariate Correlations

Additional insight can be gleaned from the data by analyzing significant correlations within the measured dimensions (e.g. individual, context, process, and readiness). Regarding the individual measurements, there were no significant correlations between scales with the exception of a positive correlation between innovativeness and efficacy ($r$ = .37, $p$ < .05). The two context variables, POS and discrepancy exhibited a significant negative correlation ($r$ = -.41, $p$ < .01) indicating that individuals who perceived higher levels of organizational support also perceived less need to change the organization. As only one process variable was measured, no

correlation was necessary for that dimension. Effective, continuance, and normative commitment correlated with the overall commitment scale, which was expected as the subscales are combined to create the overall scale. The affective, continuance, and normative scales correlated with the overall scale at the $p < .01$ level with $r$ values of $r = .52$, $r = .70$ and $r = .85$ respectively. Additionally, normative commitment correlated positively with both affective and continuance commitment ($r = .49$, $p < .01$; $r = .35$, $p < .05$ respectively). Pessimism demonstrated no significant correlation with any of the readiness variables measured.

**Inter-dimensional Bivariate Correlations**

Since the focus of this study is readiness for knowledge management and due to the relatively large number of possible permutations of correlational relationships between the variables measured, only correlations between the readiness variables and the other dimensions will be discussed. For a complete record of bivariate relationships, consult Table 3. The readiness variables generally exhibited significant correlations with three of the individual variables measured; namely, organizational level, efficacy, and innovativeness. Pessimism, normative commitment, and overall commitment correlated with organizational level at $p < .05$ with $r$ values of $r = .33$, $r = -.39$, and $r = -.42$ respectively. Affective commitment, normative commitment, and overall commitment correlated with efficacy. In this correlation, affective commitment exhibited an r-value of $r = .44$ at $p < .01$, while normative and overall commitment displayed $r$-values of $r = .40$ and $r = .37$ respectively at the $p < .05$ level. Finally, pessimism, affective commitment and continuance commitment correlated with innovativeness with respective $p$ and $r$ value sets of $r = -.30$, $p < .05$; $r = .30$, $p < .05$; $r = -.41$, $p < .01$. These values indicate

results that are generally expected. Specifically, pessimism and tenure at the organization positively correlate; while pessimism and innovativeness negatively correlate. Additionally, commitment variables generally indicate decreased commitment as you progress towards the worker side of the management/worker continuum. Expectedly, commitment variables generally indicate increased commitment for workers who perceive themselves to be more effacious. Surprisingly, continuance commitment negatively correlated with innovativeness.

The readiness variables exhibited some correlation with contextual variables as well. Pessimism negatively correlated with POS ($r = -.37$, $p < .05$), while the commitment variables exhibited no significant correlation with POS. Discrepancy exhibited a significant, positive correlation with pessimism ($r = .33$, $p < .05$); but failed to correlate in any meaningful way with the commitment variables. Generally, the contextual variables interacted as expected with pessimism, pairing high values of organizational support and discrepancy with low and high values of pessimism respectively.

Finally, the singular process variable, communication climate, correlated negatively ($r = -.48$, $p < .01$) with pessimism and positively ($r = .30$, $p < .05$) with affective commitment. This relationship seems to indicate that more favorable communications climates are associated with decreased pessimism and increased affective commitment.

## Mean Score Analysis By Groups

Two relevant demographic variables were measured, organizational level and length of employment. Organizational level was defined as the number of management

levels above a respondent. Thus, the organization's highest member of management would reply zero, while the employee with the most levels of management above him or her would reply six. Nineteen respondents indicated a level of 3 or less, while 22 indicated between 4 and 6 levels of management above them. Relative to the organization in question, employees at level three typically have at least one person under their supervision, generally in an apprenticeship role, while employees at levels four and up more often did not have employees reporting to them. For this reason, employees in levels 0-3 were classified as management, while employees in levels 4-6 were designated as workers. While this breakdown was appropriate for basic analysis, it was important to note that many employees at level three were still involved directly in the manufacturing process. An independent sample *t* test was used to determine whether significant differences existed in the mean scale scores between management and lower-level employees, with the results reflected in Table 4. Relatively small significant differences were found in all of the readiness variables except for continuance commitment. Generally, lower level employees were more pessimistic and demonstrated less change commitment than higher level employees.

Table 4
Compared Mean Scale Scores by Organizational Level

| *Variables* | *t* | *df* | *Significance (2-tailed)* | *Mean Difference*[†] |
|---|---|---|---|---|
| **Individual** | | | | |
| *Time* | -1.26 | 37 | 0.22 | -38.95 |
| *Positive Affect* | -0.34 | 32 | 0.74 | -0.09 |
| *Negative Affect* | 0.90 | 31 | 0.38 | 0.22 |
| *Efficacy* | -0.73 | 38 | 0.47 | -0.18 |
| *Innovativeness* | -0.14 | 37 | 0.89 | -0.04 |
| **Context** | | | | |
| *POS* | -0.46 | 35 | 0.65 | -0.23 |
| *Discrepancy* | -0.46 | 38 | 0.65 | -0.18 |
| **Process** | | | | |
| *Communication Climate* | -0.95 | 38 | 0.35 | -0.41 |
| **Readiness** | | | | |
| *Pessimism* | 2.72 | 37 | 0.01 | 0.94 |
| *Affective* | -3.07 | 38 | 0.00 | -0.61 |
| *Continuance* | -0.75 | 36 | 0.46 | -0.25 |
| *Normative* | -2.45 | 33 | 0.02 | -0.74 |
| *Overall* | -2.11 | 31 | 0.04 | -0.44 |

[†]Positive differences indicate lower level employees have more of the given attribute than management employees, while negative values indicate the opposite.

The second demographic grouping was by length of employment. Length of employment was defined as the number of months of continuous employment at the organization. Employees with higher values on this scale had worked for the company longer. The mean length of employment was 9.73 years with a standard deviation of 8.25 years. Further inspection showed a large cluster of employees with relatively short employment durations which corroborates known data that the organization went through an expansive period recently. The recent growth and normal turnover account for the relatively large cluster of short-seniority employees. Due to the skewness of the variable,

the group divided based on the median score of 101. The groups were labeled more and less senior employees. An independent sample t-test was used to determine whether significant differences existed in the mean scale scores between more senior and less senior employees. The results of the t-test are given in Table 5. Again, relatively small significant differences were found between more and less senior employees in the readiness variables with the exception of affective and continuance commitment. Additionally, a significant difference was found in the organizational level between the two groups. Generally, more senior employees scored higher on the pessimism and readiness variables. Additionally, more senior employees were typically at slightly higher levels in the organization, comparatively.

Table 5
Compared Mean Scale Scores By Length Of Employment

| *Variables* | *t* | *df* | *Significance (2-tailed)* | *Mean Difference*[†] |
|---|---|---|---|---|
| **Individual** | | | | |
| *Level* | -2.54 | 37 | 0.02 | -1.16 |
| *Positive Affect* | -0.02 | 38 | 0.98 | -0.01 |
| *Negative Affect* | 0.33 | 34 | 0.75 | 0.08 |
| *Efficacy* | 0.03 | 42 | 0.97 | 0.01 |
| *Innovativeness* | -1.11 | 42 | 0.27 | -0.31 |
| **Context** | | | | |
| *POS* | 0.07 | 40 | 0.95 | 0.03 |
| *Discrepancy* | 0.78 | 44 | 0.44 | 0.30 |
| **Process** | | | | |
| *Communication Climate* | -0.82 | 43 | 0.42 | -0.33 |
| **Readiness** | | | | |
| *Pessimism* | 1.47 | 42 | 0.15 | 0.52 |
| *Affective* | 0.89 | 43 | 0.38 | 0.19 |
| *Continuance* | 0.93 | 42 | 0.36 | 0.30 |
| *Normative* | 1.15 | 37 | 0.26 | 0.33 |
| *Overall* | 1.59 | 36 | 0.12 | 0.31 |

[†]Positive differences indicate more senior (calculated by length of employment, not level) employees have more of the given attribute than less senior employees, while negative values indicate the opposite.

## Summary

Descriptive statistics, including measures of central tendency, spread and bivariate relationships were calculated and scale score relationships were reported. Some significant differences in scale means were found between respondents from different organizational levels and lengths of employment. Correlational relationships between scale scores were generally anticipated; however, specific commentary regarding these relationships is reserved for the next chapter.

# IV. Discussion, Conclusions and Recommendations

## Discussion

The goal of this research project was to extend previous efforts towards developing an instrument to measure readiness for knowledge management in an organization. The specific intent of this effort was to examine and enhance the theoretical underpinnings of existing research, to refine the existing instrument to the extent necessary and to test the instrument in an organization. Previous research had shown promise but lacked robust theoretical underpinnings, leaving some room for debate as to the content of the existing instrument. This research effort addressed many of those theoretical concerns and provides compelling arguments that knowledge management changes can and possibly should be viewed in the larger context of organizational change, and that the four dimensional change readiness model is useful in evaluating organizational readiness for a knowledge management effort. Utilizing this four dimensional readiness model, readiness for knowledge management change was conceptualized as being made up of individual, context, content and process variables.

The second stated goal of this research project was to further develop the existing instrument developed by Holt et al. (2004). The culmination of this research effort was the development and subsequent administration of such an instrument. While it was not necessary to add any measurement scales to the original instrument, several scales were eliminated and one scale was modified. Each scale used in this study was tested for evidence of reliability and validity by their original authors, with the exception of the scale measuring discrepancy. In this research, the scales generally demonstrated internal

consistencies that met or approached the .7 cutoff suggested by Nunally (1978). The single scale that was modified significantly in this research, the discrepancy scale, fell below the standard for reliability; however, the new discrepancy scale's reliability score was far greater than that demonstrated by the discrepancy scale in the original instrument, indicating that further refinement of the scale may result in acceptable levels of reliability.

The instrument was tested in a field setting by calculating correlations between all bivariate pairs. Additionally, intra-dimensional correlations were discussed as well as correlations between the readiness scales and the individual, context and process variables. Significant correlations between scales were generally in the expected directions, when present; however, fewer significant correlations were observed than expected. While any number of reasons might have caused fewer than expected significant correlations, the most likely cause is the small sample that participated. Additionally, the suboptimal reliability of some of the scales, when used on this sample, may have suppressed detecting correlations between the variables.

The scale administration allowed for the discovery of several salient points that were useful for the senior leadership at the manufacturing firm where it was administered. Generally, the sample population expressed neutral sentiments in most areas. The respondents' affective mood state could be characterized as slightly positive, but far more positive than negative. Similarly, they scored low on the assessment of pessimism concerning KM changes. The sample population had positive perceptions of their efficacy and innovativeness but a slightly negative perception of organizational support and communication climate. Generally, the sample population showed support

for KM changes. One important consideration regarding interpretation of the data obtained in this study is the relative difficulty in normalizing of the scale scores. As the KM readiness measurement tool is new, the study sample cannot be compared to other groups who have taken the same survey. Thus, it is difficult to interpret how the mean scores obtained from the current sample compare to any other group, or to establish a point of reference. One method by which the scores in this sample could gain the benefit of a point of reference without sampling other organizations is to implement some sort of judgmental normalization process whereby the organizational leaders might establish what they consider acceptable organizational scores in each of the areas.

The examination of the sample population by groups was also particularly helpful, demonstrating that employees lower in the organizational structure were more pessimistic and less committed to change than their colleagues in management. This relationship is particularly interesting as there was no significant difference observed regarding the communications climates reported by the two groups. Essentially, both groups indicated they were receiving appropriate amounts of information, yet they exhibited different levels of commitment. While many possible explanations exist for this phenomenon, it is appears most likely that the relationship is a function of sample size and the resultant granularity that was obtainable in examining the results. It is likely that to adequately answer this question, it would be necessary to examine more organizational levels as the change message may permeate into the lower levels enough to effect the communications climate of the group, but not low enough to create readiness among the lowest levels. Additionally, employees who had longer tenure tended to be more pessimistic toward KM changes but were still generally more committed to KM changes than employees

more new to the organization. These results seem to indicate that while work would be needed across the board to enhance readiness for KM at the manufacturing plant, special attention should be made to ensure the change message reaches those lower in the organization. Overall, the organization is a good candidate for KM programs, provided the organization first cultivates readiness. This result is most likely not uncommon as organizational researchers pointed out long ago that cultivating readiness in the lower levels of an organization often takes more effort than achieving the same level of readiness at upper levels (Hage & Aiken, 1970).

**Limitations**

This research effort clearly has some limitations that warrant discussion. Foremost among these limitations is the decreased power associated with a relatively small sample size. The small sample size in this research limited the statistical methods that could be used to analyze the questions. Furthermore, the research venue in question, while considering implementing *some* KM program, was not considering *any particular* KM program, thus eliminating the ability to assess the content dimension of the readiness model. Similarly, a number of variables from the process dimension could not be measured as the organization had not yet began implementation. Additionally, this project, like many questionnaire-based research efforts, may have been affected by common method bias. Some efforts were made to decrease the potentially damaging effects of common method bias including randomizing the items on the questionnaire. Similarly, since all of the data in this survey was obtained from a single source, it is impossible to be certain that the relationships observed are a result of actual covariance

between the latent constructs rather than some sort of contamination on the part of the respondent (Podsakoff & Organ, 1986). Finally, this research cannot demonstrate the predictive validity of the scale as it was utilized in only one organization and administered only once.

**Future Research**

Given the limitations of this research, many of the recommendations for future research are obvious next-steps in order to improve upon this effort. Most importantly, this research would benefit from a much wider administration of the instrument to a variety of organizations at the beginning stages of implementing one or more KM programs. Such an administration would do much to alleviate the issues in this research concerning sample size. Secondly, results from this questionnaire should be compared to other methods of assessing readiness for knowledge management, such as expert based case-studies. Furthermore, this instrument would benefit from the review of a panel of experts. All of these efforts would provide increased evidence of validity and reduce any common method bias. Finally, predictive validity could be established by administering this instrument to a number or organizations at the outset of a particular KM program, measuring the efforts made towards creating readiness in the organization and finally making an assessment of KM maturity after some length of time.

**Summary**

The effective management of knowledge in organizations is increasingly necessary to obtain or sustain competitive advantage. To that end, many organizations have embarked on initiatives to manage knowledge more effectively in their

organizations. As many of these initiatives meet with less than ideal results, astute managers logically wish to gauge the current level of readiness for knowledge management among the individuals within their organization. This research effort attempts to address the issue of readiness for knowledge management from the broader context of organizational change. A phased approach was employed that established firm conceptual links between the knowledge management and organizational change literature in order to identify key enablers of knowledge management, further developed an existing instrument to measure those enablers within the four dimensions of readiness at the individual level, and finally field tested the instrument. Overall, the instrument developed shows promise and has contributed to the existing body of knowledge by furthering our understanding of the measurement of readiness for knowledge management in organizations.

## Appendix A: Survey Overview

Knowledge Management Readiness Questionnaire

(Total of 71 items on the questionnaire)

PROCESS VARIABLES

Communication climate (4 items—Miller, Johnson, & Grau, 1994)

CONTEXTUAL VARIABLES

Perceived organizational support (6 items—Eisenberger, Huntingon, Hutchison, & Sowa, 1986)

Discrepancy (3 items—Adapted from Armenakis, et al., 2002)

INDIVIDUAL VARIABLES

Positive affect (10 items—Watson, Clark, & Tellegen, 1988)

Negative affect (10 items—Watson, et al., 1988)

Efficacy (6 items—Holt, 2002)

Innovativeness (8 items—Hurt, Joseph, Cook, 1977)

READINESS VARIABLES

Change commitment (18 items—Herscovitch & Meyer, 2002)

Pessimism (4 items—Wanous & Reichers, 2000)

DEMOGRAPHIC VARIABLES

Age (1 item)

Organizational Level (1 item)

## Variable & items from each scale

### PROCESS VARIABLES (Total = 4 items)

**Communication climate (Miller, Johnson, & Grau, 1994).** Measures the extent to which respondents feel that they receive necessary information. High scores indicate effective communications.

I feel like no one ever tells me anything about what's going on around here. (R)

I am thoroughly satisfied with the information I receive about what's going on at [organization's name].

My performance would improve if I received more information about what's going on here. (R)

The people who know what's going on at here at [organization's name] do not share information with me. (R)

### INDIVIDUAL VARIABLES (Total = 34 items)

**Positive affect (Watson et al., 1988).** Measures the extent to which respondents are disposed to feel enthusiastic, active, and alert. High scores indicate higher levels of energy, full concentration, and pleasurable engagement.

Interested

Alert

Excited

Inspired

Strong

Determined

Attentive

Enthusiastic

Active

Proud

**Negative affect (Watson et al., 1988).** Measures the extent to which respondents are disposed to feel a variety of adverse mood states that include anger, contempt disgust, fear, and nervousness. High scores indicate general levels of distress.

Irritable

Distressed

Ashamed

Upset

Nervous

Guilty

Scared

Hostile

Jittery

Afraid

**Efficacy (Holt et al., in press)**. Measures the extent to which one feels that he or she has the skills and is able to execute the tasks and activities that are associated with the implementation of knowledge management.

I do not anticipate any problems adjusting to the work I will have if knowledge management is adopted.

If we implement knowledge management, I feel I can handle it with ease.

When I set my mind to it, I can learn everything that will be required if this knowledge management is adopted.

There are some tasks that will be required if we adopt knowledge management I don't think I can do well. (R)

I have the skills that are needed to make knowledge management work.

My past experiences make me confident that I will be able to perform successfully after knowledge management is implemented.

**Innovativeness (Hurt, Joseph, & Cook, 1977)**. Measures the extent to which one feels an underlying personality construct, which is interpreted as a willingness to change.

I am generally cautious about accepting new ideas.

I rarely trust new ideas until I can see whether the vast majority of people around me accept them.

I am aware that I am usually one of the last people in my group to accept something new.

I am reluctant about adopting new ways of doing things until I see them working for people around me.

I tend to feel that the old way of living and doing things is the best way.

I am challenged by ambiguities and unsolved problems.

I must see other people using new innovations before I will consider them.

I often find myself skeptical of new ideas.

## CONTEXTUAL VARIABLES (Total = 9 items)

**Perceived organizational support (Eisenberger, Huntington, Hutchison, & Sowa, 1986).** Measures the extent to which respondents feel that the organization values their contributions, treats them favorably, and cares about their well-being. High scores indicate that respondents feel the organization is committed to them.

The organization shows very little concern for me. (R)

The organization is willing to extend itself in order to help me perform my job to the best of my ability.

| Variable & items from each scale | |
|---|---|
| | Even if I did the best job possible, the organization would fail to notice me. (R) |
| | The organization takes pride in my accomplishments. |
| | The organization cares about my general satisfaction at work. |
| | The organization really cares about my well-being. |

**Discrepancy (Adapted from: Armenakis, Self et al., 2002).** Measures the extent to which one feels that the organization is in need of a change.

| | |
|---|---|
| | Our organization has problems that need to be addressed. |
| | There is a clear vision guiding [organization's name]. |
| | There is a clear need for [organization's name] to change our business activities. |

## READINESS VARIABLES (Total = 22 items)

**Pessimism (Wanous, Reichers, & Austin, 2000).** Measures the extent to which respondents feel pessimistic concerning the impending changes.

| | |
|---|---|
| | Most of the programs that are supposed to solve problems around here will not do much good. |
| | Attempts to make things better around here will not produce good results. |
| | Suggestions on how to solve problems will not produce much real change. |
| | Plans for future improvement will not amount to much. |

**Change Commitment (Herscovitch & Meyer, 2002).** Measures the extent to which respondents demonstrate behavioral support for knowledge management.

| | |
|---|---|
| Affective | I believe in the value of knowledge management. |
| | Knowledge management is a good strategy for this organization. |
| | I think that management is making a mistake by introducing knowledge management. (R) |
| | Knowledge management serves an important purpose. |
| | Things would be better without knowledge management. (R) |
| | Knowledge management is not necessary. (R) |
| Continuance | I have no choice but to go along with knowledge management. |
| | I feel pressure to go along with knowledge management. |
| | I have too much at stake to resist knowledge management. |
| | It would be too costly for me to resist knowledge management. |
| | It would be risky to speak out against knowledge management. |
| | Resisting knowledge management is not a viable option for me. |
| Normative | I feel a sense of duty to work toward knowledge management. |
| | I do not think it would be right of me to oppose knowledge management. |

**Variable & items from each scale**

I would not feel badly about opposing knowledge management. (R)

It would be irresponsible of me to resist knowledge management.

I would feel guilty about opposing knowledge management.

I do not feel any obligation to support knowledge management. (R)

**READINESS VARIABLES (Total = 22 items)**

**Pessimism (Wanous et al., 2000).** Measures the extent to which respondents feel pessimistic concerning the impending changes.

Most of the programs that are supposed to solve problems around here will not do much good.

Attempts to make things better around here will not produce good results.

Suggestions on how to solve problems will not produce much real change.

Plans for future improvement will not amount to much.

**Demographic Variables (Total = 2 items)**

What is your age in years?

To the best of your knowledge, how many levels of management separate you from your organization's senior leader (i.e., Squadron commander, CEO, or president).
Choose one of the following:

## Appendix B: Questionnaire

# Readiness for knowledge management survey

**Purpose**: Our research team is investigating readiness for implementation of initiatives to improve knowledge management. Our goal is to more fully understand [your organization's] readiness for such a change and give leaders information that will help them understand your concerns.

**Anonymity**: We would greatly appreciate your completing this survey. Your input is important for us to completely understand this change. **ALL ANSWERS ARE ANONYMOUS**. No one outside the research team will ever see your questionnaire. Findings will be reported at the group level only. We ask for some limited demographic information in order to interpret results more accurately. Reports summarizing trends in large groups may be published.

**Contact information**: If you have any questions or comments about the survey contact Landon Bailey at the fax, mailing address, or e-mail address listed below.

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**INSTRUCTIONS**

- Base your answers on your own feelings and experiences
- Read directions carefully and mark only one answer for each question
- If completing a paper version , please write clearly making dark marks (feel free to use a blue or black ink pen that does not soak through the paper)
- Avoid stray marks and if you make corrections erase marks completely

***MARKING EXAMPLES***

Right ● Wrong ⊗ ⃠ ⊙

**PART I**

# ATTITUDES TOWARD KNOWLEDGE MANAGEMENT

We would like to understand how you feel about the implementation of initiatives to improve knowledge management within your organization. The following questions will help us do that. Unless specifically told otherwise, the terms, "organization" refers to PSM and "top management" refers to the owner, president, or CEO.

Knowledge management initiatives are projects that make it easier and/or faster to share knowledge throughout the organization. Generally speaking, knowledge management is the recognition that your knowledge is [your organization's] most valuable asset and should be used to its fullest potential. The practice of knowledge management also recognizes that it should be easy for you to access knowledge that experts within your organization have when it can help you on your job. Hypothetically speaking, such initiatives might include the following:

1) Extensive knowledge libraries that capture best practices in written, audio, and video formats (i.e. a repository of best practices, results of past improvement or kaizen initiatives, or web-accessible video interviews with retiring personnel who have extensive experience in certain processes);

2) A directory listing or "yellow pages" (either electronic or paper-based) that lists points of contact and resident experts throughout your organization for various topics;

3) Computer software and hardware that allows multiple individuals (regardless of geographic location) to collaborate real-time (i.e. web cams and video conferencing capability at each desktop);

4) Monetary award incentives for sharing knowledge with others; and/or

5) Job performance standards based on knowledge sharing.

Answer each of the following statements by filling in the circle for the number that indicates the extent to which you agree that the statement is true.

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1. | Things would be better without knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 2. | Knowledge management serves an important purpose. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 3. | It would be too costly for me to resist knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 4. | Knowledge management is a good strategy for this organization. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 5. | If we implement knowledge management, I feel I can handle it with ease. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 6. | There are some tasks that will be required if we adopt knowledge management I don't think I can do well. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 7. | I do not think it would be right of me to oppose knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 8. | It would be irresponsible of me to resist knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 9. | Knowledge management is not necessary. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 10. | Resisting knowledge management is not a viable option for me. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 11. | I believe in the value of knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 12. | I feel a sense of duty to work toward knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 13. | I have no choice but to go along with knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 14. | I would feel guilty about opposing knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 15. | When I set my mind to it, I can learn everything that will be required if this knowledge management is adopted. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 16. | I have too much at stake to resist knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 17. | I feel pressure to go along with knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 18. | I do not feel any obligation to support knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 19. | It would be risky to speak out against knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 20. | I have the skills that are needed to make knowledge management work. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 21. | I think that management is making a mistake by introducing knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 22. Knowledge management is not necessary. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 23. I do not anticipate any problems adjusting to the work I will have if knowledge management is adopted. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 24. I would not feel badly about opposing knowledge management. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

**PART II**

## ATTITUDES TOWARD [Your Organization] AND YOUR JOB

We would like to understand how you generally feel about PSM and your job. The following questions will help us do that. You should answer each statement by filling in the circle for the number that indicates the extent to which you agree that the statement is true.

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25. I feel like no one ever tells me anything about what's going on around here. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 26. There is a clear need for PSM to change our business activities. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 27. My performance would improve if I received more information about what's going on here. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 28. I am thoroughly satisfied with the information I receive about what's going on at PSM. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 29. The organization shows very little concern for me. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 30. Even if I did the best job possible, the organization would fail to notice me. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 31. The people who know what's going on at here at PSM do not share information with me. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 32. The organization cares about my general satisfaction at work. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 33. The organization is willing to extend itself in order to help me perform my job to the best of my ability. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 34. There is a clear vision guiding PSM. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 35. The organization really cares about my well-being. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 36. PSM could improve if it made some changes. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 37. Attempts to make things better around here will not produce good results. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 38. Suggestions on how to solve problems will not produce much real change. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 39. Most of the programs that are supposed to solve problems around here will not do much good. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 40. The organization takes pride in my accomplishments. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 41. Plans for future improvement will not amount to much. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

**PART III**

## ATTITUDES ABOUT YOURSELF

We would like to understand how you feel about change in general. The following questions will help us do that. You should answer each statement by filling in the circle for the number that indicates the extent to which you agree that the statement is true.

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 42. I tend to feel that the old way of living and doing things is the best way. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 43. I am challenged by ambiguities and unsolved problems. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 44. I am generally cautious about accepting new ideas. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 45. I rarely trust new ideas until I can see whether the vast majority of people around me accept them. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 46. I am reluctant about adopting new ways of doing things until I see them working for people around me. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 47. I must see other people using new innovations before I will consider them. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | **Disagree** | **Slightly Disagree** | **Neither Agree or Disagree** | **Slightly Agree** | **Agree** | **Strongly Agree** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 48. I am aware that I am usually one of the last people in my group to accept something new. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
| 49. I often find myself skeptical of new ideas. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

The following scale consists of a number of words that describe different feelings and emotions. Please read each item and then fill in the circle that best reflects the way you generally feel, that is, how you feel on average concerning changes. Use the following scale to indicate your answers.

| ① | ② | ③ | ④ | ⑤ |
|---|---|---|---|---|
| Very slightly Or not at all | A little | Moderately | Quite a bit | Extremely |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Interested | ① | ② | ③ | ④ | ⑤ | Irritable | ① | ② | ③ | ④ | ⑤ |
| Distressed | ① | ② | ③ | ④ | ⑤ | Alert | ① | ② | ③ | ④ | ⑤ |
| Excited | ① | ② | ③ | ④ | ⑤ | Ashamed | ① | ② | ③ | ④ | ⑤ |
| Upset | ① | ② | ③ | ④ | ⑤ | Inspired | ① | ② | ③ | ④ | ⑤ |
| Strong | ① | ② | ③ | ④ | ⑤ | Nervous | ① | ② | ③ | ④ | ⑤ |
| Guilty | ① | ② | ③ | ④ | ⑤ | Determined | ① | ② | ③ | ④ | ⑤ |
| Scared | ① | ② | ③ | ④ | ⑤ | Attentive | ① | ② | ③ | ④ | ⑤ |
| Hostile | ① | ② | ③ | ④ | ⑤ | Jittery | ① | ② | ③ | ④ | ⑤ |
| Enthusiastic | ① | ② | ③ | ④ | ⑤ | Active | ① | ② | ③ | ④ | ⑤ |
| Proud | ① | ② | ③ | ④ | ⑤ | Afraid | ① | ② | ③ | ④ | ⑤ |

**PART IV**

## BACKGROUND

This final section contains items regarding your personal characteristics. These items are very important for statistical purposes. Respond to each item by WRITING IN THE INFORMATION requested or darkening the answer that best describes you. If you aren't certain about the answer to a question, you may estimate.

To the best of your knowledge, how many levels of management separate you from your organization's senior leader (i.e., Squadron commander, CEO, or president)? _____levels

How long have you worked for your organization? _____ years _____ months

**PLEASE FEEL FREE TO MAKE ANY ADDITIONAL COMMENTS ABOUT KNOWLEDGE SHARING & OTHER CHANGES ON THE BACK OF THESE PAGES**

**Thank you for your participation!**

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**14. ABSTRACT**

Academics and practitioners have described knowledge as a primary source for competitive advantage for organizations; however, many attempts at instituting knowledge management programs to increase organizational competitiveness do not succeed. Instituting knowledge management programs generally requires organizations to make significant changes and the concept of readiness has long been believed to be an important precondition for successful organizational change. By linking previous research in enablers for knowledge management and organizational change, it is possible to adapt an established organizational change readiness instrument to measure readiness for knowledge management. This study culminates in the development and field-testing of the resultant knowledge management readiness instrument, filling in an important gap in contemporary literature.

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